

Memorandum

TO: TRANSPORTATION &
ENVIRONMENT COMMITTEE

FROM: John Stufflebean

**SUBJECT: REDUCING POLYSTYRENE
FOAM IN THE WASTE STREAM**

DATE: 4-16-10

Approved



Date

4/20/10

RECOMMENDATION

Accept this status report regarding the efforts to reduce polystyrene foam in the waste stream in California.

BACKGROUND

On February 2, 2010, the Rules & Open Government Committee requested a status report on the City's efforts to reduce polystyrene foam from the waste stream to be heard by the Transportation and Environment Committee (T&E) in May. The Committee directed staff to also provide summary information on efforts to reduce polystyrene foam in Bay Area jurisdictions and throughout the State. At the May 2008 T&E meeting, the Committee accepted the staff report on plastic bags and hard-to-recycle foodservice ware, and planned for a follow-up report in September 2008. Subsequent staff work has focused on stakeholder engagement and other initiatives to reduce single-use carryout bags.

The May 2008 T&E memorandum included a report, "Policy Tools for Reducing Impact of Single-Use, Carryout Plastic Bags and Foam Food Packaging." The report discussed that reduction in the use of single-use plastics results in the conservation of energy and materials; reduces greenhouse gases and other air pollutants; reduces litter in the City's streets, storm drains, and creeks; reduces the cost of litter control and recycling programs; and demonstrates environmental leadership in support of the city's Green Vision and Zero Waste goals. Reduction in the use of single-use plastics also enables the City to meet Action 5 of the Urban Environmental Accords furthering San José's goal to be a Global Sustainable City. Staff proposed to evaluate the feasibility of restricting purchase and use of non-compostable plastic packaging by any restaurant, grocery, or retail store as part of the work plan in part because such materials, especially expanded polystyrene foam cups and packaging, have environmental impacts similar to plastic bags and are as difficult to recycle.

Council has taken some actions to reduce foam food packaging. On October 7, 2008, Council approved San José's partnership with Save The Bay, for the Cities Keep It Clean initiatives, now known as the Clean Bay Project. This partnership required City agreement to develop a strategy for local food establishments to dramatically reduce the use of non-biodegradable/non-compostable take-out food containers through ban or fee programs. In November 2009, Council voted to ban polystyrene carryout food packaging from large City events. Effective May 2010, special events with over 1,000 attendees, as a condition of the Event Authorization permit, are required to ban polystyrene use by food vendors.

ANALYSIS

Polystyrene (PS) is a type of plastic frequently used in food packaging such as clear plastic cups, trays, and clamshells (commonly used for sandwiches and salads). Foamed plastics, such as expanded polystyrene (EPS) and extruded polystyrene foam (XPS), are also frequently used in food packaging due to their light weight and insulating qualities. Foam cups and bowls are usually EPS, while XPS is used for clamshells for hot sandwiches, as well as for meat trays and similar products. (Note that Styrofoam™ is a brand name for XPS products used only for building insulation or craft projects, even though the name is frequently used for all polystyrene foam products.) Solid polystyrene is also used for disposable plastic eating utensils and for many durable products.

The California Ocean Protection Council (OPC) reported that the state agencies had found that Californians use 165,000 tons of polystyrene each year for packaging and food service purposes alone, with no meaningful recycling of food service polystyrene. In 1999, an estimated 300,000 tons of polystyrene (0.8% of total waste) was disposed of in landfills. Because this material is non-biodegradable, it lasts for hundreds of years. When littered, polystyrene, especially EPS can end up in creeks and storm drains where it can be carried downstream to the sea, floating hundreds of miles in the ocean. A 1998–2000 CalTrans study found that polystyrene represented 15% of the total volume of litter recovered from storm drains. Studies have increasingly found that this type of expanded plastic foam can have detrimental effects on marine wildlife.

More than 40 cities and counties in California have taken measures to reduce polystyrene foam use. Most recently, on April 1, 2010, San Bruno's ban on polystyrene went into effect at establishments that sell prepared food. In the Bay Area, other cities with polystyrene bans at food establishments are Berkeley (1990), Oakland (2007), San Francisco (2007), Millbrae (2008), South San Francisco (2008), and Pacifica (2010). Palo Alto adopted its ordinance in May 2009; it goes into effect April 22, 2010. San Jose and at least a dozen other California jurisdictions have banned purchase of polystyrene foam containers for their own use and prohibited its use at public events and facilities. See Attachment A for a list of jurisdictions with EPS bans and partial bans.

The City of Berkeley adopted its Polystyrene Foam Food Packaging ordinance in 1988, which, effective January 1990, banned polystyrene foam food packaging. Although the ordinance does not specifically address any other types of plastic, it requires that 50% of all food packaging

must be degradable or recyclable. The regulated food packaging includes bags, sacks, wrapping, containers, bowls, plates, trays, cartons, cups, straws, and lids; it does not include utensils. A hardship exemption is provided if no acceptable equivalent packaging is available. Similar ordinances that require 100% of food packaging to be either compostable or recyclable effectively ban all polystyrene packaging, including clear clamshells and cups, while a requirement that packaging be biodegradable effectively bans all plastic containers except for those meeting current standards for compostability.

Some jurisdictions regulate almost all disposable food service items. The City of Alameda's ordinance includes this definition:

"Disposable food service ware" means all containers, bowls, plates, trays, cartons, cups, lids, straws, forks, spoons, knives and other items that are designed for one-time use and on, or in, which any restaurant or retail food vendor directly places or packages prepared foods or which are used to consume foods. This includes, but is not limited to, service ware for takeout foods and/or leftovers from partially consumed meals prepared at restaurants or retail food vendors.

The City of Santa Monica adopted its Ordinance Banning Non-Recyclable Plastic Disposable Food Service Containers in January 2007, which was effective February 2007. This ordinance banned EPS at city facilities and concessions, and events permitted or sponsored by the city; businesses were given one year to make the switch from non-recyclable containers. Santa Monica, unlike Berkeley, explicitly banned both expanded polystyrene and other polystyrene containers. Non-recyclable plastic containers were banned, while recyclable containers, such as cups and clamshells made from polyethylene terephthalate (PET) and high density polyethylene (HDPE), were permitted, as was packaging made from low density polyethylene (LDPE) and polypropylene (PP). Straws, lids, and plastic utensils are not covered. A renewable one-year exemption is available to businesses that cannot find an appropriate recyclable container for a specific purpose or for undue economic hardship.

Efforts to reduce polystyrene foam in Santa Clara County

At its October 2009, meeting, the Santa Clara County Recycling and Waste Reduction Commission (RWRC) identified the reduction of polystyrene packaging as one of its top three priorities for 2010. At the February 2010 RWRC meeting, County staff updated the Commission on local action related to polystyrene foam. Many cities in the County are collecting PS for disposal, not for recycling. Packing 'peanuts' are generally not accepted, as bags filled with peanuts can sometimes break open at recycling facilities, leading to contamination throughout the facility. Polystyrene pieces are lightweight, easily wind-borne, and become difficult to contain and control, so this material can easily become marine environment pollution. Some cities, such as Milpitas, are considering polystyrene bans for future recommendation to their City Council. See Attachment B for the February 2010 County staff report, accompanying matrix of County cities' polystyrene regulations, and letters submitted to the County from polystyrene companies, DART, NEPCO and Timbron.

At the February 2010 RWRC meeting, County staff and the RWRC's Technical Advisory Committee (TAC) were directed to begin a review of Expanded Polystyrene. As part of this review, Santa Clara County TAC members met with Santa Cruz County TAC members in February 2010. Santa Cruz County and various cities within Santa Cruz County enacted bans on polystyrene in 2008, providing an opportunity to use Santa Cruz County's experiences and programs to develop a draft model ordinance for Santa Clara County. Polystyrene was further discussed at the March 2009 meeting of TAC's Source Reduction and Recycling (SRR) Subcommittee. SRR will develop a timeline for developing County-wide recommendations to TAC on this issue which will include a stakeholder engagement strategy.

Currently in Santa Clara County, only Palo Alto has enacted an ordinance banning polystyrene and non-recyclable plastic. Beginning on April 22, 2010, food vendors will be prohibited from providing prepared food in disposable food service containers made from expanded polystyrene or non-recyclable plastic in Palo Alto. Food vendors are defined as any establishment, located or providing food within the City of Palo Alto, which provides prepared and ready-to-consume food or beverages, for public consumption including but not limited to any store, supermarket, delicatessen, restaurant, retail food vendor, sales outlet, shop, cafeteria, catering truck or vehicle, sidewalk or other outdoor vendor or caterer. The City of Palo Alto prepared a mitigated negative declaration before enacting their ordinance.

Polystyrene foam: San José litter and recycling issues

Polystyrene foam and many forms of single-use plastics are frequently found as litter in San José streets and creeks. For Santa Clara County, litter is a regional issue especially as it relates to creeks. In Sunnyvale, a litter study at the Remington outfall provided detailed information on the trash in one local stream. Over a recent six month period, plastics were found to be 82% of the litter found below the outfall. Polystyrene was found to be 16.2% of the total litter, similar to the 15% reported by Caltrans for their storm drains.

In spite of concentrated efforts to reduce street and creek litter, trash persists on San José streets, and plastic litter persists in San José waterways. In 2009, staff estimates that at least \$3 million was spent on litter abatement. The Municipal Regional Stormwater Permit (MRP), adopted by the San Francisco Regional Water Quality Control Board and in effect as of December 2009, will require expenditures for litter-prevention infrastructure in the City of San José of a projected \$2 million per year during the 5-year permit cycle. Trash levels for creeks in San José (Guadalupe, Coyote and Silver Creeks) are severe enough that the following stringent litter reduction goals will be required:

MRP Trash Reduction Requirements:

40% reduction of litter in creeks by 2014

70% reduction by 2017

100% reduction by 2022

Increasing recycling infrastructure for polystyrene and other lightweight plastic commodities does not alleviate the litter problem. Just as with plastic carryout bags, many individuals will not

take the time to clean and save and turn in their polystyrene fast food containers, cups, and utensils, and general food packaging for recycling. These items are often littered along highways, streets, and waterways.

For many years, materials recovery facilities (MRFs) have tried to collect polystyrene that is clean and free from food residue, as has been required by the commodity buyers. The City's largest single-family recycling contractor, California Waste Systems, reports that the amount of polystyrene recycled has been negligible due to contamination and the requirements of the recycling commodities markets. The small amounts diverted are not reported as separate commodities, and are instead mixed with other low-value plastics. Almost all EPS food packaging collected by the City's residential recycling companies is landfilled.

GreenTeam of San Jose has collected EPS since starting their first residential contract with the City in 1993. As the markets for postconsumer EPS that had been established by the plastics industry in the early 1990s dried up and processing facilities closed, GreenTeam's MRF eventually stopped separating EPS from the single-stream recyclables collected from residential homes and apartments. GreenTeam has not successfully separated and marketed EPS for five years or more and has declined to install EPS densification equipment described below for several reasons, including space constraints, labor requirements, and market uncertainty. Both the machines and the sorting lines would require extra staff to capture and process the EPS; which would cost significantly more than the revenue GreenTeam would make from the sale of the material on the recyclable commodities market. The single-stream recycling collection system used in San José, which has driven high recycling rates for the residential sector, does not lend itself to the labor-intensive, special handling necessary for clean polystyrene.

Nationally, the American Chemistry Council reports that in 2001 (the latest year for which they provide online data), 55.3 million total pounds of disposable polystyrene products were recycled, only 200,000 pounds of which were food service products. The amount for the other major types was: protective packaging - 25.2 million pounds; bottles and containers - 200,000 pounds; and non-packaging non-durables - 29.7 million pounds.

Currently the residential Recycle Plus program is updating its instructions to customers regarding expanded polystyrene. Recycling facility operators have had to sort out the polystyrene from the recycling bins, to separate it for landfill disposal. The foam is consistently contaminated by being mixed in with other recyclable materials. Residents will be instructed to dispose of the polystyrene as garbage, not in their recycling carts, to increase the efficiency at the MRFs.

Dart Container Corporation's EPS Recycling Program

Dart Container Corporation is a manufacturer of single-use products for the foodservice, retail/consumer, and food packaging industries. It claims to be the world's largest manufacturer of foam cups. Dart has four EPS recycling facilities (none in the west); its plant in Mason, Michigan, has washing/drying capacity for contaminated food service foam, while the others do not. Dart operates polystyrene foam drop-off locations for recycling, open to the public, at its two manufacturing plants in California, in Lodi and Corona. The instructions for dropping off EPS at these facilities say "Food service containers MUST be clean and rinsed."

As bans on the product have been increasing, Dart has increased their promotion of polystyrene recycling, citing potential markets, and even allowing that the polystyrene does not necessarily need to be clean in order to be recycled. However at the February 2010 RWRC meeting, the letter from Timbron International, one of the polystyrene buyers, states that the material must be "clean from contaminants and food residue." See Attachment B.

Dart has offered to provide and install densification machinery at no cost for San Jose MRF's. Some MRF operators have indicated that acceptance of this offer would require that recycling facilities promote polystyrene recycling at public meetings. They have not been willing to take the machinery given this stipulation.

The San Jose Flea Market reports that it is currently considering a proposal from Dart Container Corporation to bring an EPS recycling program on-site. The unique environment and large scale of the Flea Market may make such an operation feasible there. Since the Flea market has hundreds of vendors located on a single private facility of 120 acres, and since most EPS food service ware would be used on site, they may be able to successfully recover such containers in a way that typical food vendors could not. However, it is not clear whether the same litter and recyclability issues would arise with containers that are removed from the site by customers.

Fundraising events, such as the recent Council District 2 event on April 3, are sometimes organized to collect polystyrene which residents have cleaned and stored. Residents of Palo Alto, Daly City, and Sunnyvale joined San José residents in transporting polystyrene which they had been storing for such an occasion. Dart volunteered to pick-up this polystyrene, and transport it to their facility in Lodi. If manufacturers were to consistently provide pick-up and collection of this material, recycling would increase. However over the years that municipalities have tried to recycle polystyrene, manufacturers have not established any system which would be sustainable for them and for the community over the long-term. Instead, local governments fund the programs for the cleaning, collection, and transport of the material through garbage service rates. Regardless of the success of any efforts to divert polystyrene from the waste stream, recycling programs do not mitigate the litter created by polystyrene products.

California Legislation

Assembly Bill (AB) 2138 (Chesbro), Plastic Ocean Pollution Reduction, Recycling and Composting Act, was introduced in February 2010, and passed the Assembly Natural Resources Committee on April 12, 2010. It will next be heard by the Assembly Appropriations Committee. Staff will bring a recommendation to the Rules and Open Government Committee that Council adopt a Support position for this bill, which is consistent with the Council-adopted 2010 Legislative Guiding principles, and the Council-adopted guidelines. AB 2138 would by 2013 prohibit food providers from distributing single-use food packaging and bags unless they are accepted for either recycling or composting in at least 75% of households in a jurisdiction and are recovered at rate of at least 25%. Single-use packaging used on-site would have to be accepted by the provider for recycling or composting.

This policy will make the fast food sector and other providers of single-use food packaging responsible to: i) switch to packaging that is compatible with the recycling and/or composting services available in the communities they serve, ii) work with local governments and recyclers to increase processing and market capacity for recyclable and compostable packaging alternatives, and iii) work with consumers to ensure that their packaging is recycled or composted. Although San Jose does not currently have services for industrial scale composting for the commercial or single-family home residential sector, such service is projected to be provided within the next three to four years in order to achieve the City's Zero Waste Goal.

PUBLIC OUTREACH

The criteria below do not apply to this report. This document will be posted on the City's website for the May 3, 2010 Transportation and Environment Committee meeting where Council and the public have the opportunity to comment.

- ☐ **Criteria 1:** Requires Council action on the use of public funds equal to \$1 million or greater. **(Required: Website Posting)**
- ☐ **Criteria 2:** Adoption of a new or revised policy that may have implications for public health, safety, quality of life, or financial/economic vitality of the City. **(Required: E-mail and Website Posting)**
- ☐ **Criteria 3:** Consideration of proposed changes to service delivery, programs, staffing that may have impacts to community services and have been identified by staff, Council or a Community group that requires special outreach. **(Required: E-mail, Website Posting, Community Meetings, Notice in appropriate newspapers)**

EVALUATION AND FOLLOW UP

Staff will continue to participate in the RWRC TAC and SRR subcommittee process in partnership with other Santa Clara County city representatives. Staff plans to bring forward the results of this regional effort to the T&E Committee in late 2010. In addition, strategies to restrict single-use plastics will be developed as part of meeting MRP requirements and regional anti-litter efforts.

COORDINATION

This memorandum was coordinated with the City Attorney's Office, Office of Economic Development, the Intergovernmental Relations Director in the City Manager's Office, and the City's Legislative Representative in Sacramento.

TRANSPORTATION AND ENVIRONMENT COMMITTEE

Subject: Reducing Polystyrene Foam in the Waste Stream

04-16-10

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CEQA

Not a Project, File No. PP10-069 (a) City Organizational & Administrative Activities.

/S/

JOHN STUFFLEBEAN

Director, Environmental Services

For questions, please contact Jo Zientek, Deputy Director, Integrated Waste Management, at (408) 535-8557.

Attachment A: California Cities with Expanded Polystyrene Bans

Attachment B: Staff report to the Santa Clara County Recycling and Waste Reduction Commission (RWRC) on Expanded Polystyrene, Matrix of EPS actions by County cities, Letters to RWRC from DART, NEPCO, and Timbron.